

**NOVEL METHODS AND COMPOSITIONS TO UPREGULATE, REDIRECT OR  
LIMIT IMMUNE RESPONSES TO PEPTIDES, PROTEINS AND OTHER BIOACTIVE  
COMPOUNDS AND VECTORS EXPRESSING THE SAME**

**ABSTRACT OF THE DISCLOSURE**

Novel compositions are disclosed which can induce or enhance an immune response against foreign or self antigens (microbial or parasitic) or modulate (that can lead to suppression) the activity of pathogenic cells in inflammatory or autoimmune diseases. Compositions and methods are taught in how to limit the generation of an immune response against formulated peptides and proteins with application in antibody therapy or hormone replacement therapy. Methods of suppressing autoimmunity are also disclosed which use ligands for cellular receptors expressed on cells of the innate immune system and more specifically for down-regulation of autoimmune processes by either deletion or induction of anergy at the level of autoreactive T cells or by triggering active-suppressor T cells that down-regulate the activity of pathogenic cells.